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UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte MITSUO TAKASHIMA, KENTARO TAKADA, ZENJI IIDA,
KATSUHIRO TSUKIYAMA, TAKEHIKO EGAWA,
YUICHI NAMIMURA, and TOBUHIKO IBARAKI

Appeal 2011-006129
Application 10/591,475
Technology Center 1700

Before HUBERT C. LORIN, JEFFREY T. SMITH, and
DEBORAH KATZ, *Administrative Patent Judges*.

KATZ, *Administrative Patent Judge*.

DECISION ON APPEAL

This appeal, under 35 U.S.C. § 134, is of the rejection of claims 1-18. (App. Br. 1-2.) The real parties in interest are said to be Honda Motor Co., Saga Tekkohsho Co., Ltd., and Kabushiki Kaisha Kobe Seiko Sho. (App. Br. 1.) We have jurisdiction under 35 U.S.C. § 6(b). We affirm.

The Examiner maintained the rejection of claims 1-18 under 35 U.S.C. § 103(a)¹ over Namimura², in view of any one of Koike³, Hijikata⁴, or Stefayne⁵.

Appellants do not argue for the separate patentability of any of the claims. We focus on claim 1 in our review. *See* 37 C.F.R. § 41.37(c)(1)(vii).

Appellants' claim 1 recites⁶:

A high-strength bolt having a tensile strength of 1,200 N/mm² or more that is superior in delayed fracture resistance and relaxation resistance, wherein the bolt is prepared by:

wire-drawing a bolt steel containing the following elements:

C: 0.5 to 1.0% (mass %, the same shall apply hereinafter),
Si: 1 to 3%,
Mn: 0.2 to 2%,

¹ Appellants also note that the Examiner objected to claim 12. (App. Br. 2.) We do not review objections to claims. *See* 35 U.S.C. § 134(a); 37 C.F.R. § 41.31(a).

² JP 2000-337334 A1 (translation), published December 5, 2000.

³ US 2002/0179207 A1, published December 5, 2002.

⁴ JP 59-226116 A1 (translation), published December 19th 1984.

⁵ US 3,677,829, issued July 18th 1972.

⁶ Claim 1 has been modified by adding indentations between the elements. (*See* 37 C.F.R. § 1.75(1).)

P: 0.03% or less (but not 0%),
S: 0.03% or less (but not 0%),
Al: 0.3% or less (but not 0%), and
Cr: 0.51 to 2.5%, and
containing proeutectoid ferrite, proeutectoid
cementite, bainite and martensite at a total area
rate of less than 20% and pearlite in balance;

cold-heading the wire into a bolt shape; and then

subjecting the bolt comprising 1 % to 3% Si to a bluing
treatment in a temperature range of 100 to 500°C to form a
solid solution of Si in the ferrite.

(App. Br. 11, Claims App'x.)

The Examiner found that Namimura teaches a high-strength bolt with a tensile strength of 1,200 N/mm² or more and having “excellent delayed fracture resistance.” (Ans. 3-4; Namimura, ¶ [001].) The bolt of Namimura contains the elemental ingredients recited in Appellants’ claim 1 in overlapping weight percentages. (See Namura, ¶¶ [0016], [0018], [0020], [0025], [0029], and [0030]; Ans. 3-4.) Namimura also teaches the percentages of total area rate of ferrite and pearlite recited in Appellants’ claim 1. (See Namura, ¶ [0012]; Ans. 3-4.) Though Appellants argue that Namimura teaches preferred embodiments that are not within the claimed ranges (see App. Br. 5), “[a]ll disclosures of the prior art, including unpreferred embodiments, must be considered.” *In re Lamberti*, 545 F.2d 747, 750 (C.C.P.A. 1976).

The Examiner recognized that Namimura does not teach subjecting the bolt to a bluing treatment in a temperature range of 100° to 500° C to form a solution of Si in the ferrite. (Ans. 5.) The Examiner cited Koike,

Hijikata, and Stefayne for teaching subjecting a bolt to a bluing treatment.
(Ans. 7-8.)

Koike teaches a high strength bolt with a similar elemental and microstructure structure as the claimed bolt. (*See* Koike, ¶¶ [0008] and [0023]-[0035].) Koike teaches subjecting the shaped steel bolt to a bluing treatment at a temperature within the range of 100° to 400° C to increase its strength and improve the relaxation property. (Koike, ¶ [0008] and [0020]; *see* Ans. 5-6.)

Hijikata teaches bluing treatment at 300° – 350° C of a high tensile strength bolt that includes 0.3-0.6% C and 1.2% or more Si by weight. (*See* Hijikata, pp. 4-5 and 9; Ans. 6-7.)

Stefayne teaches that bluing is desirable to prevent unwanted reflection of light and to provide some resistance to corrosion on steel surfaces. (Stefayne, col. 1, ll. 28-37; Ans. 7.)

The Examiner concluded that it would have been obvious to one of ordinary skill in the art to have subjected Namimura's bolt to a bluing treatment in the claimed temperature range, as taught in Koike, Hijikata, and Stefayne for the advantages disclosed therein. (Ans. 7-8.) For example, Koike discloses the advantages of increase strength, proof stress ratio, and relaxation resistance of the bolt. (*Id.*) The Examiner also concluded that it would have been obvious to one of ordinary skill in the art to have selected the claimed ranges of alloying compositions and bluing temperature because the references teach that the prior art bolts have a utility in the disclosed ranges. (Ans. 8-9.) Appellants do not direct us to evidence that the results produced with the claimed ranges were unexpected.

Appellants argue that each reference, in isolation, does not teach a bolt with the claimed features. For example, Appellants argue that Namimura does not teach a bluing treatment (App. Br. 5), that Koike does not teach the claimed Si content (*id.* 6), and that Hijikata and Stefayne do not teach the same composition of steel as claimed (*id.* 7-8). The Examiner cited Namimura to teach the elemental composition of the claimed bolt. (Ans. 3-4.) “Non-obviousness cannot be established by attacking references individually where the rejection is based upon the teachings of a combination of references.” *In re Merck & Co., Inc.*, 800 F.2d 1091, 1097 (Fed. Cir. 1986). Accordingly, we are not persuaded by Appellants’ arguments.

Appellants also argue that the bluing treatment in Stefayne is different from the “required bluing treatment.” (App. Br. 8.) Appellants’ claim 1 recites subjecting the bolt to a bluing treatment in a temperature range of 100 to 500°C, but with no other limitations. Stefayne discloses that the process is carried out at any selected temperature between 300° C and 400° C and maintained at the desired temperature for up to thirty minutes. (Stefayne, col. 3, ll. 38-42). Thus, we are not persuaded that Stefayne describes a bluing treatment that is different from the “required bluing treatment” as argued by Appellants. Furthermore, Appellants have not directed us to sufficient evidence that the bluing treatment taught in Stefayne is “completely different” from that described in Appellants’ specification or that bolts resulting from either treatment, if they are different, would be different. (*See* Ans. 17.)

ORDER

Upon consideration of the record and for the reasons given,
the rejection of claims 1-18 under 35 U.S.C. § 103(a) over Namimura,
in view of any one of Koike, Hijikata, or Stefayne is SUSTAINED.

Therefore, we affirm the decision of the Examiner.

No time period for taking any subsequent action in connection with
this appeal may be extended under 37 C.F.R. § 1.136.

AFFIRMED

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